

AMENDMENTS TO THE CLAIMS

1-66. (Canceled)

67. (Currently amended) A composition comprising a ~~stabilized~~ an exendin-4 (1-39) analog comprising:

(a) a deletion of ~~0 to 5~~ 0 to 3 amino acids at positions corresponding to position 34-38 ~~36-38~~ of exendin-4; and

(b) an alpha-aspartate (Asp); ~~a beta-aspartate (isoaspartyl); or a cyclic imide~~ residue at a position corresponding to the Asn residue at position 28 of exendin-4 (SEQ ID NO:107);

~~(c) optionally an oxidized methionine residue at a position corresponding to position 14 of exendin-4;~~

~~(d) optionally an oxidized tryptophan residue at a position corresponding to position 25 of exendin-4; and~~

~~(e) optionally a deamidated or hydrolyzed Gln at a position corresponding to position 13 of exendin-4.~~

68. (Canceled)

69. (Currently amended) The composition of claim 67 further comprising at least one peptide sequence Z of 4-20 amino acid residues covalently bound to the ~~stabilized~~ exendin analog; or a pharmaceutically acceptable salt or solvate thereof.

70. (Canceled)

71. (Previously presented) The composition of claim 69, wherein Z comprises between about 4 to about 20 Lys amino acid units.

72. (Previously presented) The composition of claim 69, wherein Z comprises 6 Lys amino acid units.

73. (Currently amended) The composition of claim 69, wherein the **stabilized** exendin-4 (1-39) compound and Z are bonded by a peptide bond.

74. (Currently amended) The composition of claim 69, wherein Z is covalently bound to the **stabilized** exendin-4 (1-39) compound at the C-terminal carbonyl function.

75. (Currently amended) The composition of claim 67, wherein the **stabilized** exendin-4 (1-39) compound comprises a sequence selected from the group consisting of:

[Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:83),
des Pro³⁶[Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:15),
des Pro³⁶.Pro³⁷[Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:108), and
des Pro³⁶.Pro³⁷.Pro³⁸[Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:28).
des Pro³⁶[IsoAsp²⁸]Exendin-4 (1-39),
des Pro³⁶[D-IsoAsp²⁸]Exendin-4 (1-39),
des Pro³⁶[Met(O)¹⁴, Asp²⁸]Exendin-4 (1-39),
des Pro³⁶[Met(O)¹⁴, IsoAsp²⁸]Exendin-4 (1-39),
des Pro³⁶[Trp(O₂)²⁵, Asp²⁸]Exendin-4 (1-39),
des Pro³⁶[Trp(O₂)²⁵, IsoAsp²⁸]Exendin-4 (1-39)
des Pro³⁶[Met(O)¹⁴, Trp(O₂)²⁵, Asp²⁸]Exendin-4 (1-39), and
des Pro³⁶[Met(O)¹⁴, Trp(O₂)²⁵, IsoAsp²⁸]Exendin-4 (1-39).

76. (Previously presented) The composition of claim 75 further comprising the following group linked to the C-terminus of the compound: -Lys₆-NH₂.

77. (Currently amended) The composition of claim 67, wherein the stabilized exendin-4 (1-39) compound comprises a sequence selected from the group consisting of:

H-(Lys)₆-des Pro³⁶[Asp²⁸]Exendin-4(1-39)-Lys₆-NH₂ (SEQ ID NO:27),

H-(Lys)₆-des Pro³⁶, Pro³⁷, Pro³⁸ [Asp²⁸]Exendin-4(1-39)-NH₂ (SEQ ID NO:29),

H-Asn-(Glu)₅des Pro³⁶, Pro³⁷, Pro³⁸ [Asp²⁸]Exendin-4(1-39)-NH₂ (SEQ ID NO:30),

des Pro³⁶, Pro³⁷, Pro³⁸ [Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂ (SEQ ID NO:31),

H-(Lys)₆-des Pro³⁶, Pro³⁷, Pro³⁸ [Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂ (SEQ ID

NO:32), and

H-Asn-(Glu)₅-des Pro³⁶, Pro³⁷, Pro³⁸ [Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂ (SEQ ID
NO:33),

H-(Lys)₆-des Pro³⁶[Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-Lys₆-NH₂;

H-(Lys)₆-des Pro³⁶, Pro³⁷, Pro³⁸[Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-NH₂;

H-Asn-(Glu)₅-des Pro³⁶, Pro³⁷, Pro³⁸[Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-NH₂;

des-Pro³⁶, Pro³⁷, Pro³⁸[Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂;

H-(Lys)₆-des-Pro³⁶, Pro³⁷, Pro³⁸[Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂;

H-Asn-(Glu)₅-des-Pro³⁶, Pro³⁷, Pro³⁸[Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-(Lys)₆-

NH₂;

H-(Lys)₆-des Pro³⁶[Met(O)¹⁴, Asp²⁸]Exendin-4(1-39)-Lys₆-NH₂;

H-(Lys)₆-des Pro³⁶, Pro³⁷, Pro³⁸[Met(O)¹⁴, Asp²⁸]Exendin-4(1-39)-NH₂;

H-Asn-(Glu)₅-des Pro³⁶, Pro³⁷, Pro³⁸[Met(O)¹⁴, Asp²⁸]Exendin-4(1-39)-NH₂;

des-Pro³⁶, Pro³⁷, Pro³⁸[Met(O)¹⁴, Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂;

H-(Lys)₆-des Pro³⁶, Pro³⁷, Pro³⁸[Met(O)¹⁴, Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂;

H-Asn-(Glu)₅-des-Pro³⁶, Pro³⁷, Pro³⁸[Met(O)¹⁴, Asp²⁸]Exendin-4(1-39)-(Lys)₆-

NH₂;

H-Lys₆-des Pro³⁶[Met(O)¹⁴, Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-Lys₆-NH₂;

H-(Lys)₆-des-Pro³⁶, Pro³⁷, Pro³⁸[Met(O)¹⁴, Trp(O₂)²⁵, Asp²⁸]Exendin-4(1-39)-NH₂;

~~H-Asn-(Glu)₅-des-Pro³⁶,Pro³⁷,Pro³⁸[Met(O)¹⁴,Trp(O₂)²⁵,Asp²⁸]Exendin-4(1-39)-NH₂,
des-Pro³⁶,Pro³⁷,Pro³⁸[Met(O)¹⁴,Trp(O₂)²⁵,Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂,
H-(Lys)₆-des-Pro³⁶,Pro³⁷,Pro³⁸[Met(O)¹⁴,Trp(O₂)²⁵,Asp²⁸]Exendin-4(1-39)-
(Lys)₆-NH₂, and
H-Asn-(Glu)₅-des-Pro³⁶,Pro³⁷,Pro³⁸[Met(O)¹⁴,Trp(O₂)²⁵,Asp²⁸]Exendin-4(1-39)-
(Lys)₆-NH₂,~~
or a pharmaceutically acceptable salt or solvate thereof.

78. (Previously presented) The composition of claim 67, wherein the amino acid residues have an L-configuration, a D-configuration, or the composition includes a mixture of L- and D-amino acid residues.

79. (Currently amended) A composition of any one of claims 67 and ~~70-78~~ 71-78, further comprising a pharmaceutically acceptable carrier.

80. (Previously presented) A composition of claim 69, further comprising a pharmaceutically acceptable carrier.

81. (Previously presented) The composition of claim 79, wherein the composition comprises a depot formulation, microspheres, liposomes or the composition includes a stabilized liquid formulation.

82. (Previously presented) The composition of claim 80, wherein the composition comprises a depot formulation, microspheres, liposomes or the composition includes a stabilized liquid formulation.

83-91. (Canceled)

92. (Currently amended) A method for treating diabetes type 1 ~~or type 2, insulin resistance syndrome, impaired glucose tolerance (IGT), obesity, eating disorders, hyperglycemia, metabolic disorders, and gastric disease,~~ the method comprising administering a therapeutically effective amount of the composition of claim 67.

93. (Previously presented) A method for treating disease states associated with elevated blood glucose levels, said method comprising administering a therapeutically effective amount of the composition of claim 67.

94. (Previously presented) A method for treating disease states associated with elevated blood glucose levels, said method comprising administering a therapeutically effective amount of the composition of claim 69.

95. (Previously presented) A method for regulation of blood glucose levels, the method comprising administering a therapeutically effective amount of the composition of claim 67.

96. (Previously presented) A method for regulation of blood glucose levels, the method comprising administering a therapeutically effective amount of the composition of claim 69.

97. (Withdrawn) A method for regulation of gastric emptying, the method comprising administering a therapeutically effective amount of the composition of claim 67.

98. (Withdrawn) A method for regulation of gastric emptying, the method comprising administering a therapeutically effective amount of the composition of claim 69.

99. (Previously presented) A method of stimulating insulin release in a mammal comprising administering an effective insulinotropic amount of the composition of claim 67.

100. (Previously presented) A method of stimulating insulin release in a mammal comprising administering an effective insulinotropic amount of the composition of claim 69.

101-108. (Canceled)

109. (New) The peptide of claim 75 comprising the sequence [Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:83).

110. (New) The peptide of claim 75 comprising the sequence des Pro³⁶[Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:15).

111. (New) The peptide of claim 75 comprising the sequence des Pro³⁶,Pro³⁷[Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:108).

112. (New) The peptide of claim 75 comprising the sequence des Pro³⁶,Pro³⁷,Pro³⁸[Asp²⁸]Exendin-4 (1-39) (SEQ ID NO:28).

113. (New) The peptide of claim 77 comprising the sequence
H-(Lys)₆-des Pro³⁶[Asp²⁸]Exendin-4(1-39)-Lys₆-NH₂ (SEQ ID NO:27).

114. (New) The peptide of claim 77 comprising the sequence
H-(Lys)₆-des Pro³⁶,Pro³⁷,Pro³⁸[Asp²⁸]Exendin-4(1-39)-NH₂ (SEQ ID NO:29).

115. (New) The peptide of claim 77 comprising the sequence
H-Asn-(Glu)₅-des Pro³⁶, Pro³⁷,Pro³⁸[Asp²⁸]Exendin-4(1-39)-NH₂ (SEQ ID NO:30).

116. (New) The peptide of claim 77 comprising the sequence
des Pro³⁶, Pro³⁷,Pro³⁸[Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂ (SEQ ID NO:31).

117. (New) The peptide of claim 77 comprising the sequence
H-(Lys)₆-des Pro³⁶,Pro³⁷,Pro³⁸[Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂ (SEQ ID NO:32).

118. (New) The peptide of claim 77 comprising the sequence
H-Asn-(Glu)₅-des Pro³⁶,Pro³⁷,Pro³⁸[Asp²⁸]Exendin-4(1-39)-(Lys)₆-NH₂ (SEQ ID NO:33).